Remarks

Applicant notes with appreciation the detail and thoroughness of the Office Action dated March 10, 2008.

By this paper, claims 6-9 have been amended and claims 10-14 are added new. Support for the amendment is found, among other places, at lines 9-13 and 23-28 on page 3 and lines 15-25 on page 4 of the specification originally filed. No new matter is introduced by this amendment.

Currently, claims 1-14 are pending.

Claims 6-8 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1-3 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hovestadt et. al. (U.S. 5,453,460, hereinafter *Hovestadt*). Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hovestadt* in view of Moriarty et al. (U.S. 6,692,670, hereinafter *Moriarty*). Claims 5-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hovestadt* in view of Patzelt et al. (U.S.. 5,766,370, hereinafter *Patzelt*). Claims 8-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hovestadt* in view of *Patzelt*, as applied to claims 5-7 above, further in view of applicant's admission of prior art.

Remarks Directed to Rejections to Claims 6-8 under 35 U.S.C. 112, second paragraph

Claims 6-8 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for lacking proper antecedent basis (Office action, page 2). In response, claims 6-8 are amended to depend from independent claim 5. As such, proper antecedent basis has been provided with the instant amendment.

Reconsideration and withdrawal of rejections to claims 6-8 under 35 U.S.C. § 112, second paragraph, is solicited.

Remarks Directed to Rejections to Claims 1-3 under 35 U.S.C. 102(b) over Hovestadt

Claims 1-3 are rejected under 35 U.S.C. § 102(b) as being anticipated by *Hovestadt*. For at least the reasons stated below, Applicant respectfully traverses this rejection.

Claim 1 in current form recites a coating comprising, among other things, "a paint residue extracted from a paint waste stream."

The paint residue of claim 1 illustratively refers to a "high viscous liquid at ambient temperature" that is extracted from the paint waste stream defined as a liquid that "does not contain large amounts of gelled paint" (page 3, lines 9-26). In at least one example, the paint residue may be extracted through heat-assisted distillation followed by suitable cooling. *Id.* The resultant paint residue has a certain hydroxyl content, may be thinned before being subjected to a particular application, and more importantly is "capable of reacting with a hardener to form a useable surface coating" (line 27 of page 3 to line 1 of page 4).

Contrary to the Patent office's assertion on pages 2-3 of the Office action, *Hovestadt* fails to teach or suggest the subject matter embodied in claim 1 and particularly to the element of "a paint residue extracted from a paint waste stream" as recited in claim 1 and as defined in the relevant portions of the original specification illustratively shown above.

As acknowledged on pages 2-3 of the Office action, *Hovestadt* relates to a process for reusing the overspray obtained when spraying water dilutable two-component polyurethane coating compositions. The *Hovestadt* process includes collecting the overspray; reacting the overspray with externally added compounds to react out the isocyanate groups and reusing the resulting aqueous solution or dispersion of the chemically modified overspray" (Abstract).

The term "overspray" is defined in *Hovestadt* as "the components [of water-dilutable two-component polyurethane coating compositions] which do not reach the substrate to be coated" (col. 1, lines 10-15). As such, the overspray of *Hovestadt* is in fact a portion of a

unused yet still active paint composition. Since the overspray of *Hovestadt*, as discussed above, contains all the necessary components to form a cross-linkable composition on its own, it is therefore reasonably foreseeable to one skilled in the art that, upon the *Hovestadt* overspray being subjected to distillation under heat and subsequent cooling to ambient temperature, what forms as a result thereof would be a solid rather than a viscous liquid in relation to the paint residue defined in the instant specification.

Moreover, and as stated above, the *Hovestadt* process creates a modified overspray of aqueous two-component polyurethane systems through the addition thereto of compounds having high reactivity to isocyanate groups. As a result, the modified overspray is deemed to have been accorded a longer shelf life with the polyisocyante component of the two-component system being deactivated or blocked by the added compounds (col. 5, lines 49-57). However, this configuration comes with disadvantages. The overspray of *Hovestadt* containing the externally supplied compounds is a complicated mixture with the exact function thereof largely unknown. The active isocyanate groups are not removed but merely masked through the added compounds. In addition, the entire disclosure of *Hovestadt* does not seem to address what would happen if the externally added compounds are supplied in excess and what the potential impact is with relation to the resultant unreacted added compounds.

Furthermore, the resultant coating composition of the *Hovestadt* process is substantially a solution or a liquid dispersion which is at least impliedly of relatively lower viscosity. The relatively lower viscosity is illustratively evidenced in Example 1 in *Hovestadt* wherein the liquid dispersion is taught to be directly applied as a coating composition without additional steps such as solvent thinning such that the associated viscosity may be decreased (col. 7, lines 36-41).

Therefore, the *Hovestadt* fails to teach or suggest a paint residue extracted from a paint waste stream as illustratively defined above, much less a paint residue having a relatively higher viscosity at ambient temperature which probably requires advanced thinning before a coating application. Since *Hovestadt* fails to teach or suggest at least one element of the

independent claim 1, claim 1 and all the claims dependent therefrom are submitted to be patentable under 35 U.S.C. 102(b) over *Hovestadt*.

Reconsideration and withdrawal of the rejections to claim 1-3 under 35 U.S.C. 102(b) over *Hovestadt* is solicited.

Remarks Directed to Rejections to Claim 4 under 35 U.S.C. 103(a) over Hovestadt in view of Moriarty

Claim 4 is rejected under 35 U.S.C. 103(a) over *Hovestadt* in view of *Moriarty*. As stated on pages 3-4 of the Office Action, *"Hovestadt* does not teach the claimed MDI. However, *Moriarty* teaches polymeric MDI comprising less than 48% diisocyanate (MDI) (3:30-35). *Hovestadt* and *Moriarty* are combinable because they are from the same field of endeavor, namely isocyanate binders." For at least the reasons stated below, Applicant respectfully traverses this rejection.

Claim 4, being dependent from independent claim 1 now believed to have been allowable in light of the prior art, is submitted to be patentable based on dependency from claim 1. In addition, claim 4 is patentable on at least one independent ground as given below.

Claim 4 recites a coating composition having a MDI isocyanate wherein the MDI is mixture of "4,4' - diphenylmethane diisocyanate substantially 30-60% by weight and polymethylene polyphenyl isocyanate substantially 30-60% by weight."

Contrary to the Patent office's assertion as cited above, and with particular regard to lines 30-35 of column 3 as referenced in the assertion, *Moriarty* teaches that the diisocyanate content of a polymeric MDI may be reduced and a MDI may have a "diisocyanate content of less than about 48% by weight" (emphasis added). A diisocyanate content of less than 48% with respect to the polymeric MDI as taught in *Moriarty* is drastically different, and/or somewhat irrelevant to, the claimed limitation of 4,4' - diphenylmethane diisocyanate having substantially a weight percent of 30-60%. A mixture of polymeric MDI may contain various forms of

diisocyanate molecules including 4,4'-MDI, 2,4'-MDI, or 2,2'-MDI, the combination of which may have a combined iisocyanate content of less than 48%. This observation alone does not teach with sufficient particularity the claimed MDI mixture having 30-60% by weight of the 4,4'-MDI.

Furthermore, nowhere in *Moriarty* seems to teach or suggest a MDI mixture having substantially 30-60% by weight of polymethylene polyphenyl isocyanate as recited in claim 4.

Therefore, *Hovestadt* and *Moriarty*, alone or in combination, fails to teach or suggest at least claimed element as recited in claim 4, the allowability of claim 4 is hereby requested.

Reconsideration and withdrawal of rejections to claim 4 under 35 U.S.C. 103(a) over *Hovestadt* in view of *Moriarty* is solicited.

Remarks Directed to Rejections to Claims 5-7
under 35 U.S.C. 103(a) over Hovestadt in view of Patzelt

Claims 5-7 are rejected under 35 U.S.C. 103(a) over *Hovestadt* in view of *Patzelt*. As stated on pages 4-5 of the Office Action, "*Hovestadt* does not teach placing the paint waste stream in a still, separating the solvent, and then extracting the paint residue . . . however, *Patzelt* teaches a paint overspray treatment by feeding a spent emulsion into a reaction vessel . . . to generate a volatilized organic solvent component (still), and removing residual material remaining in the reaction vessel after volatilizing the organic solvent (4:15-35) ... at the time of the invention a person of ordinary skill in the art would have found it obvious to have extracted the paint residue, as taught by *Patzelt*, in the invention of *Hovestadt*, in order to efficiently remove excess solvent from the paint residue."

Independent claim 5 recites a process comprising "placing a paint waste stream in a still; thereafter operating said still and separating wash solvent from paint residue; thereafter

extracting paint residue from said still; thereafter diluting paint residue to a workable viscosity; thereafter combining said diluted residue with a hardening agent to form a useable surface coating" (emphasis added).

As discussed above, "the paint waste stream illustratively refers to a liquid of low viscosity generated from solvent-washing of painting equipments and the paint residue refers to a "high viscous liquid at ambient temperature."

Patzelt teaches a drastically different process, as acknowledged by the Office Action in relevant portions cited above, with the process comprising "feeding a spent emulsion into a reaction vessel . . . removing residual material remaining..." (emphasis added).

The spent emulsion in *Patzelt* is formed when a solvent-in-water emulsion is circulated through a paint spray booth until the emulsion collects, detackifies, and suspends paint solid (col. 3, lines 5-10). The solvent-in-water emulsion employed in paint overspray treatment and capture systems contains at least one organic solvent component capable of dissolving at least small amounts of paint solids (col. 3, lines 52-55). Unlike the paint residue being extracted and retained as recited in claim 5, the residual materials of *Patzelt* are rather removed (col. 3, lines 24-28; and col. 4, lines 32-35).

As detailed above, *Patzelt* teaches in general a process for retaining certain organic solvent with the step of removing resultant residual materials, which teaches away any process wherein residual materials such as paint residues may be extracted and retained as recited in claim 5 of the instant application.

Moreover, and merely for the sake of argument, even if *Patzelt* could have been deemed to have taught the extraction and/or retention of residual materials, *Patzelt* fails to cure *Hovestadt's* deficient teachings as referenced above. One skilled in the art would have not combined the overspray treatment of *Hovestadt* with a residual material extraction at least since the entire modified overspray resulting from the *Hovestadt* process may be directly applied to

form a coating and there is no teaching or suggesting wherein removing any solvent from the *Hovestadt* overspray would benefit in any way the coating therefrom. Therefore, it would not have been obvious to have extracted the paint residue in light of *Patzelt*, let alone to combine any residue extraction with the overspray modification process in *Hovestadt*.

Hovestadt and *Patzelt*, alone or in combination, fail to teach or suggest at least one limitation of claim 5, claim 5 and all the claims dependent therefrom are submitted to be patentable under 35 U.S.C. 103(a) over the prior art.

Reconsideration of rejections to claims 5-7 under 35 U.S.C. 103(a) over *Hovestadt* in view of *Patzelt* is solicited.

Remarks Directed to Rejections to Claims 8-9 under 35 U.S.C. 103(a) over Hovestadt in view of Patzelt further in view of Applicant's admission of prior art

As stated on page 5 of the Office Action, claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hovestadt* in view of *Patzelt* further in view of applicant's admission of prior art.

In response, Applicant respectfully traverses this rejection based on dependency of claims 8-9 from the independent claim 5 which is believed now to be allowable.

Moreover, Applicant submits that independent ground exists for the patentability of claims 8-9. While it is one thing that paints ordinarily settle upon passive standing which naturally results in heavy pigment falling to the bottom, it is quite another when separation of color pigments is advantageously improved by the assistance of high speed rotation as recited in claims 8 and 9. As defined in the specification, the high speed rotation may take the form of 8000G force for decanter or 13000G force for centrifuge. With the improved process as embraced in claim 8 or claim 9, the heavy pigment in the paints "can readily be separated from the washings prior to distillation, yielding a clear resin upon processing" (lines 20-25 on page 4

of the specification). As such, and contrary to the assertion stated on page 5 of the Office action, the prior art does not teach or suggest claim 8 in current form.

Reconsideration and withdrawal of the rejections to claims 8-9 under 35 U.S.C. 103(a) as being unpatentable over *Hovestadt* in view of *Patzelt* further in view of applicant's admission of prior art is solicited.

Remarks Directed to Claims 10-14 Added New

Claims 10-12 are added new to depend from claim 1 with particular recitation as to the paint residue. Claim 13 is added new to depend from claim 5 with particular recitation as to the waste paint stream. Claim 14 is added new to depend from claim 5 with particular recitation as to selecting a hardening agent to be combined with the paint residue. Support for the newly added claims 10-14 is found, among other places, at lines 9-13 and 23-28 on page 3 and lines 15-25 on page 4 of the specification originally filed.

Allowability of the claims 10-14 is solicited.

CONCLUSION

Claims 1-14 are pending in the application.

Applicant has made a genuine effort to respond to each of the rejections stated in the Office action in advancing the prosecution of this case. Applicant believes that all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested. If a telephone or video conference would help expedite allowance or resolve any additional questions, such a conference is invited at the Examiner's convenience.

The Petition fee of $60.00 is being charged to Deposit Account No. 02-3978 via electronic authorization submitted concurrently herewith. Please charge any fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978.

Respectfully submitted,

Mark Andrew Rowen

By /Junqi Hang/
Junqi Hang, Ph.D.
Reg. No. 54,615
Attorney for Applicant

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BROOKS KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075-1238
Phone: 248-358-4400
Fax: 248-358-3351